Virginia, May 12. 1692.

I have ſent you another parcel of Freſh-water *and* Land Snails, *in which I believe ſome are new.* [And ſo there was divers Species, all which I have carefully cauſed to be graved.] *There is a ſmall one of the Land-kind, with a dented* Aperture, *that I formerly ſent; Time had worn that Shell ſmooth and white; but I lately found it with an outward Coat, on which it is hirſute, or rather finely echinated. I am apt to believe that theſe, nor hardly any elſe are dented, till they are at their full growth; for you will find ſeveral ſmall ones amongſt theſe with an open entrance, that ſeem to belong to this kind.*

I hitherto obſerved very little Variety of Naked Snails; *I know of but one kind, which is a ſmall Aſh-coloured and ſpotted one, and milkey like yours,* Tit. XVI. *but ſome of theſe I would have ſent, but,* &c.

I ſend you the Originals, that you may ſee I have done fairly by my Friend in the Extracts; which I deſire you to keep among the Society's Papers.

April, 18. 93. *Yours,* &c.

VI. *An Account of digging and preparing the* Lapis Calaminaris, *in a Letter from Mr.* Giles Pooley *to Sir* Robert Southwel *Preſident of the R. S.*

SIR,

I Promis'd a long while ago to give you an Account of the *Lapis Calaminaris* which is digged and prepared here near me; that I have not, as I intended long before

before this performed that Promiſe, I hope your kindneſs will excuſe, being I have been taken off by ſome neceſſary occaſions from making my Enquiries hitherto concerning it; and underſtanding that it did not require any great haſt, ſo that I hope this following Account will not come too late.

As to the finding out the *Calamine*, which I think the firſt thing to inform you of, the *Groovers* tell me there is no certainty at all, but that it is a meer Lottery: They are neither certain of it from the Surface of the Earth, which, as they obſerve, gives little or no ſigns thereof; ſometimes they ſay an oily Steam and Smell ariſeth out of the Earth where they gueſs ſome Mines to be, but not *Calamine*; nor from the Nature of the Ground, it being found ſometimes in Meadows, ſometimes in Arable, ſometimes in Paſture; and as I have obſerved, moſt commonly in barren and rocky Ground: Neither from the Colour or Taſte of the Waters running thereabouts, they being much of the ſame Colour, Taſte, Clearneſs and Wholſomneſs with other Water: Nor from the withering of the Graſs upon the Superficies of the Earth, or the Leaves of the Trees, they being as freſh where *Calamine* lies, as in any other place. But this I obſerve, that they always dig for it upon, or near the Hills; for they expect none in thoſe Grounds which have no Communication with Hills.

The Method they take for finding out a Vein is by digging a Trench as deep as till they come to the Rocks where they expect it lies, acroſs the place where they hope for a Courſe; which Trench they generally dig from North to South, or near upon that Point, the Courſes uſually lying from Eaſt to Weſt, or at Six a Clock, as their Term is. Though this is not conſtant neither; for ſometimes the Courſes, Seams or Rakes as they call them, lie at Nine a Clock, and ſometimes are perpendicular, which they call the High time of the

Day, or Twelve a Clock; and theſe Courſes they eſteem the beſt. Theſe Seams or Courſes run between the Rocks, generally wider than thoſe of Lead-Ore, unleſs they are incloſed in very hard Cliffs, and then they are as narrow as the Veins of Lead. The Colour of the Earth where *Calamine* lies, is generally a yellow Grit, but ſometimes black; for all Countries, as they term their under-ground Works, are not alike. *Calamine* it ſelf is of ſeveral Colours, ſome white, ſome reddiſh, ſome greyiſh, ſome blackiſh, which is counted the beſt; but when this is broken, it is of ſeveral Colours. In working for it below in the Countries, they uſe the ſame way and Inſtruments as they do in Lead-Mines; and ſometimes they light upon a good quantity of Lead, but always find ſome Eyes of Lead among the *Calamine*, which in ordering of it they ſeparate: Though I think in Lead Mines they do not always find *Calamine*. In landing of the *Calamine* ſome pieces are bigger than others of different ſizes, as other Stones are, and mixt with the gritty Earth; yet I have been informed by a Perſon concerned in theſe Works, that they have found one entire piece of 8 or 10 Tun, which by reaſon of its bigneſs was forc'd to be broken in the Groove before it could be landed; but generally in theſe Grooves where I made my Enquiry, it riſeth in ſmall Particles, ſome more, ſome leſs, and ſome about the bigneſs of a Nut, and this they call a ſmall *Calamine*. In ancient Works, (which are thoſe that have been forſaken and afterwards workt in again) Damps and Staunches ſometimes ariſe, but never in new Works; but that theſe Damps ariſe, an experienc'd Groover tells me is the Fault of thoſe Workmen, that do not take care to carry Air along with them, which is done by Air-Shafts, as in Lead-Mines.

When

When they have landed a good quantity of this *Calamine*, which is done by winding it up in Buckets from their Works, they carry it away to the places where they waſh, clean or buddle it, as their Term is, which they perform after this manner. They encloſe a ſmall piece of Ground with Boards or Turfs, through which a clear Stream of Water runs; within this Encloſure they ſhovel their *Calamine* with the reſt of the impure and earthy parts; and theſe impure and earthy parts the running Water which comes in at one end of the Encloſure carries away at the other end, and leaves the Lead, and the *Calamine*, and the other heavier ſtony and ſparry parts behind; and for the better cleanſing or buddling the *Calamine* while it is in this Encloſure, they often turn it, that ſo the Water paſſing through may waſh it the better: When they have thus waſhed it with this running Stream as clean as they can, having rak'd up the bigger parts both of the Lead and the *Calamine*, they afterwards put the ſmaller parts, that they may loſe none of their Ore, into Sieves made of ſtrong Wire at the bottom; and theſe Sieves, with the *Calamine*, Lead, and the Remainder of the earthy, ſparry and ſtony parts which the Water could not waſh away, they often dip and ſhake up and down in a great Tub of Water, by which ſhaking of the Sieves, the parts of the Lead which is mixt amongſt the *Calamine* ſink or pitch down to the bottom of the Sieves, as being heavieſt, the parts of the *Calamine* in the middle, and the other ſparry, ſtony and traſhy parts riſe up to the top, which as they riſe, they skim off, and throw among the reſt of the Rubbiſh, and then they take off the *Calamine*, and after that the Lead. When they have thus cleanſed the *Calamine* as well as they can, it being not yet clean enough, they are forc'd to ſpread it upon a Board, and ſo pick out with their hands the traſh and ſtones that remain. I cannot tell whether you will

apprehend this Deſcription of their buddling the ſmaller *Calamine*; but you muſt know that all of it doth not require ſo much trouble; for ſome riſeth big enough out of the Works to be cleanſed and pickt fit for the Calcining Oven without all this Charge and Pains: And I have ſeen ſeveral Loads of this great *Calamine*, which had no mixture of Earth or Traſh in it.

After they have prepared their *Calamine* by waſhing and picking, they then carry it to the Oven, which, at leaſt that which I ſaw, is much bigger than any Bakers Oven, and made much in the ſame Faſhion, only this way of heating, burning or baking the *Calamine* is different; for it is not done as bread is; for they caſt in their Coals into a Hearth made on one ſide of the Oven, which is divided from the Oven it ſelf by a Hem or Partition made open at the top, whereby the Flame of the Fire paſſeth over, and ſo heats and bakes the *Calamine*. They let it lie in the Oven for the ſpace of Four or Five Hours, the Fire burning all the while, according to the ſtrength of the *Calamine*, ſome being much ſtronger than other, and ſo requiring longer time; and while it continues in the Oven, they turn it ſeveral times with long Iron Cole-rakes; when it is ſufficiently burnt, baked and dried, they beat it to a Powder with long Iron Hammers like Mallets, upon a thick Plank, picking out what Stones they find amongſt it; ſo that at laſt the *Calamine* is reduced to Duſt: From the Oven it is conveyed in Sacks to ſome Port, where being bought by the Merchants, it is carried beyond-Sea, commonly I think to *Holland*, whether I refer you to be further informed concerning the uſe of it. I made enquiry what Medical or other Vertue there was known to be in it, and I have been informed by ſeveral credible Perſons, that the Duſt of *Calamine*, contrary to other Duſt which blinds, doth conduce much to the curing of ſore Eyes,

of

of Men; and that it is frequently made uſe of for the taking of Films from the Eyes of Horſes and other Beaſts. I hear alſo that they ſell good quantities of it to the Druggiſts of *London*, but for what uſe I know not. This is all I could learn concerning *Calamine*. If I have omitted any thing wherein you are deſirous of further Information; or if in any other Concern of this Nature I can be ſerviceable, you may freely command,

Wrington,
Oct. 25. 84.

Yours, &c.

VIII. *An Arithmetical Paradox, concerning the Chances of Lotteries, by the Honourable* Francis Roberts, *Eſq; Fellow of the* R. S.

AS ſome Truths (like the *Axiomes* of *Geometry* and *Metaphyſicks*) are ſelf-evident at the firſt View, ſo there are others no leſs certain in their Foundation, that have a very different Aſpect, and without a ſtrict and careful Examination rather ſeem repugnant.

We may find Inſtances of this kind in moſt Sciences.

In *Geometry*, That a Body of an infinite Length may yet have but a finite Magnitude.

In *Geography*, That if *Antwerp* be due Eaſt to *London*, for that reaſon *London* cannot be Weſt to *Antwerp*.

In *Aſtronomy*, That at the *Barbadoes* (and other places between the Line and Tropick) the Sun, part of the Year, comes twice in a Morning to ſome Points of the Compaſs.

In